(c) re-introducing the cell into the subject.

D1

2. (twice amended) A method of increasing immune recognition of a nonimmune cell in a subject comprising:

Cont.

(a) obtaining a cell from a subject in need of such treatment;

(b) introducing a sequence nonspecific double-stranded polynucleotide greater than 25 nucleotides in length into the cell, thereby activating expression of a gene or gene product that increases immune recognition;

(c) introducing an antigen into the cell; and

(d) re-introducing the cell into the subject.

Sub 91

4. (once amended) A method of increasing immune recognition of a mammalian immune cell in a subject comprising:

(a) obtaining an immune cell from a subject;

D2

(b) introducing a sequence nonspecific double-stranded polynucleotide greater than 25 nucleotides in length into the immune cell and thereby activating expression of a gene or gene product that increases immune recognition, wherein the polynucleotide does not contain a stimulatory CpG motif and wherein such activation is involved in antigen presentation, growth, and function of the cell; and

(c) re-introducing the immune cell into the subject.

5. (once amended) A method of increasing immune recognition of a mammalian immune cell in a subject comprising:

(a) obtaining an immune cell from a subject;

(b) introducing a sequence nonspecific double-stranded polynucleotide greater than 25 nucleotides in length into the immune cell and thereby activating expression of a gene or gene product that increases immune recognition, wherein the polynucleotide is a noncoding polynucleotide sequence and wherein such activation is involved in antigen presentation, growth, and function of the cell; and

(c) re-introducing the immune cell into the subject.

6. (once amended) The method of claim 1, 2, 4, or 5 wherein the gene or gene product associated with increased immune activation is selected from the group consisting of MHC class I, MHC class II, TAP-1, TAP-2, a proteosome subunit, HLA-DM, invariant chain, RFXA, B7 co-stimulatory molecule, PKR, MAP kinase, NF-kB, JAK, and STAT genes and gene products.

7. (twice amended) A method of increasing immune recognition of a monocyte or dendritic cell within a subject comprising:

(a) obtaining a monocyte or dendritic cell from a subject;

(b) introducing a sequence nonspecific double-stranded polynucleotide greater than 25 nucleotides in length into the monocyte or dendritic cell, wherein the polynucleotide does not contain a CpG motif, and thereby activating expression of a gene, or gene product or gene and gene product that increases immune recognition, wherein such activation is involved in antigen presentation, growth, and function of the cell, and which increases the ability of the monocyte or dendritic cell to present antigen to an immune cell of the subject; and

(c) re-introducing the cell into the subject.

8. (once amended) A method of increasing immune recognition of a mammalian immune cell in a subject comprising:

(a) obtaining an immune cell from a subject;

(b) introducing a sequence nonspecific double-stranded polynucleotide greater than 25 nucleotides in length into the immune cell, thereby activating expression of a gene or gene product that increases immune recognition, wherein such activation is involved in antigen presentation, growth, and function of the cell, and wherein the polynucleotide contains one or more CpG motifs, which if methylated do not decrease activity of the polynucleotide; and

(c) re-introducing the immune cell into the subject.

9. (once amended) The method of claim 1, 2, 4, 5, 7, or 8 wherein the double-stranded polynucleotide is introduced by the method selected from the group consisting of transfection, microinjection, viral infection of the cell, phagocytosis of a bacterium, virus, or cell, and oncogene transformation.

10. (once amended) The method of claim 1, wherein the cell is a somatic cell.

12. (once amended) The method of claim 1, 4, 5, 7, 8, 46, or 60 wherein the cell expresses an autoantigen.

13. (once amended) The method of claim 1 wherein the cell is selected from the group consisting of somatic cell, antigen presenting cell and thyroid cell.

14. (once amended) The method of claim 13 wherein the cell is a thyroid cell.

15. (once amended) The method of claim 7 or 8 wherein the gene or gene product that increases immune recognition is selected from the group consisting of MHC class I and class II genes and gene products, peptide processing genes and gene products, class II regulatory genes and gene products, and co-stimulatory molecule gene and gene products.

16. (once amended) The method of claim 6 or 15 wherein the gene or gene product is derived from the major histocompatibility complex (MHC) and wherein a MHC Class I expression increases greater than a MHC Class II expression as a function of time after introduction of concentration of the double-stranded polynucleotide.

18. (once amended) The method of claim 1, 4, 5, 7, or 8 wherein the method further comprises the step of introducing tumor cell RNA into the cell ex vivo.

21. (once amended) The method of claim 1, 4, 5, 7, or 8 wherein the cell can induce an autoimmune response when injected into the subject.

22. (once amended) The method of claim 1, 2, 4, 5, 7, or 8 wherein the cell recruits and activates T cells when injected into the subject.

24. (once amended) The method of claim 6 or 15 wherein increasing expression of the MHC molecule by double-stranded polynucleotide is additive to and independent of an interferon-mediated increase in immune recognition.

25. (once amended) The method of claim 1, 2, 4, 5, 7, or 8 wherein the double-stranded polynucleotide is RNA that is introduced into the cell and does not induce a receptor activated interferon response.

26. (once amended) The method of claim 7 wherein introduction of the double-stranded polynucleotide increases immunogenicity of the cell in a host organism and, further

D6 cont.

comprising the step of introducing an antigen into the cell prior to introduction of the cell into the subject.

Sub 91

29. (twice amended) The method of claim 1, 2, 4, 5, 7, 8, or 46 wherein the method comprises the further step of treating the cells to prevent cell division prior to introducing the polynucleotide containing cell into a host organism.

D7

30. (twice amended) The method of claim 1, 2, 4, 5, 7, or 8 wherein neither strand of the polynucleotide encodes a molecule involved in antigen presentation.

31. (twice amended) The method of claim 1, 2, 4, 5, 7, or 8 wherein the immune system of the subject recognizes one or more antigens presented by the cell.

32. (twice amended) The method of claim 75 wherein expression of both MHC Class I and Class II molecules in or on the cell are increased.

D8

34. (twice amended) The method according to claim 74 and further comprising introducing an antigen into the mammalian cell prior to introduction of the activated APC into the subject.

35. (once amended) The method of claim 34 wherein introduction causes an autoimmune reaction in the host animal.

D9

43. (once amended) The method of claim 32 wherein increasing expression of the MHC molecule by double-stranded polynucleotide is additive to or independent of an interferon-mediated increase in expression of the MHC molecule.

Sub 91

45. (once amended) The method of claim 4, 5, or 13 wherein the cell is a tumor cell and the subject has an increased ability to recognize and kill the tumor cell after such treatment.

D10

46. (twice amended) A method of presenting antigen to the immune system of a mammal in need of immunotherapy comprising;

a) introducing double-stranded polynucleotide into a somatic mammalian cell ex vivo, which improves the ability of the mammalian cell to present antigen;

b) thereby increasing expression of a molecule selected from the group consisting of MHC molecules, TAP-1, TAP-2, a proteosome subunit, HLA-DM, invariant

D10 Cont.

chain, RFXA, B7 co-stimulatory molecule, PKR, MAP kinase, NF-kB, JAK, and STAT; and

c. introducing the somatic cells into the mammal; wherein the cells induce an immune response by the mammal to an antigen.

60. (thrice amended) A method for treating a mammalian disease which is sensitive to immunotherapy which comprises:

a) removing diseased cells from a mammal identified as having a disease which is sensitive to immunotherapy;

D11

b) introducing a sequence nonspecific double-stranded polynucleotide greater than 25 nucleotides in length into the cells;

c) treating the cells to prevent cell division but permit other metabolic activity; and

d) re-introducing the treated cells into the mammal; wherein the cells induce an immune response by the mammal to a self antigen.

74. (thrice amended) The method of claim 1, 2 or 7 additionally comprising forming an activated antigen presenting cell (APC).

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75. (once amended) The method of claims 26 or 74 wherein the cell is a tumor cell and wherein the treatment is in addition to treatment with CpG motifs.

76. (twice amended) A vaccine for treating cancer comprising:

(a) a somatic mammalian cell with the enhanced ability to present antigen to the immune system wherein a sequence non-specific doubled-stranded polynucleotide greater than 25 nucleotides in length is introduced into the somatic mammalian cell *ex vivo*, which causes the cell to have an increased ability to present antigen; and

(b) a pharmaceutically acceptable carrier.

77. (twice amended) A vaccine for treating cancer which is sensitive to immunotherapy which comprises;

a) an adjuvant comprising a sequence non-specific doubled-stranded polynucleotide greater than 25 nucleotides in length;

b) an antigen of interest; and

c) a pharmaceutically acceptable carrier.

78. (twice amended) A method for augmenting a vaccine response comprising administering an antigen and an adjuvant to a mammal in need of such treatment, wherein the adjuvant comprises a sequence non-specific doubled-stranded polynucleotide greater than 25 nucleotides in length.

80. (twice amended) The method of claim 78 wherein the treatment is in addition to treatment with CpG motifs used to enhance immune cell responsiveness.

81. (once amended) A method for treating cancer which is sensitive to immunotherapy which comprises:

a) obtaining a somatic cell from a subject in need of treatment;

b) introducing a sequence non-specific doubled-stranded polynucleotide greater than 25 nucleotides in length into the somatic mammalian cell *ex vivo*, which causes the cell to have an increased ability to present antigen;

c) increasing the expression of one or more molecules involved in antigen presentation selected from the group consisting of MHC molecules, TAP-1, TAP-2, a proteosome subunit, HLA-DM, invariant chain, RFX5, B7 costimulatory molecule, PKR, MAP Kinase, NF-κB, JAK, and a STAT;

d) preparing the mammalian cell to make suitable for immunization; and

e) introducing the cell into a subject in need of such treatment.

82. (once amended) The method of Claim 81 wherein the polynucleotide is single stranded RNA molecule that, when introduced into the cell, replicates to form a double stranded polynucleotide within the cell.

83. (once amended) A method for treating a patient with a cancer which is sensitive to immunotherapy comprising:

a) removing monocytes from the patient;

b) introducing a sequence non-specific doubled-stranded polynucleotide greater than 25 nucleotides in length into the monocytes *ex vivo*, which causes the monocytes to have an increased ability to present antigen;

c). introducing a tumor cell antigen into the monocytes wherein the antigen is selected from the group consisting of a protein, a peptide, an mRNA encoding antigen and a DNA encoding antigen; and

d). re-introducing the monocytes into the patient.

Please add the following new claims:

84. (new) The method of claim 1, 2, 4, 5, 7, or 8 wherein the polynucleotide introduced into the cells is single stranded RNA molecule that, when introduced into the cell, replicates to form a double stranded polynucleotide within the cell.

85. (new) The method of claim 7 wherein methylation of any CpG motifs within the polynucleotide does not effect the activity of the polynucleotide.

86. (new) The method of claim 7 wherein the double-stranded polynucleotide does not contain any stimulatory CpG motifs.

87. (new) The method of claim 76, wherein the cell is a tumor cell.

88 (new) The method of claim 76, wherein the cell is a fibroblast and wherein the method further comprises the step of introducing tumor cell RNA into the cell *ex vivo*.

89 (new) The method of claim 76 or 77, wherein the vaccine is injected in muscle tissue of the mammal.

90 (new) The method of claim 1, 2, 7, or 78 wherein methylation of any CpG motifs within the polynucleotide does not effect the activity of the polynucleotide.

91 (new) The method of 1, 2, 7, or 78 wherein the polynucleotide is a noncoding sequence.

Attached hereto is a marked-up version of the changes made to the specification and claims by this current amendment. This page is located at the end of this response and is captioned **"Version with Markings to Show Changes Made."**